

STUDYING THE SOCIAL HABITS OF THE PENGUIN

Zoological Discoveries of a Scientist With Scott Antarctic Expedition

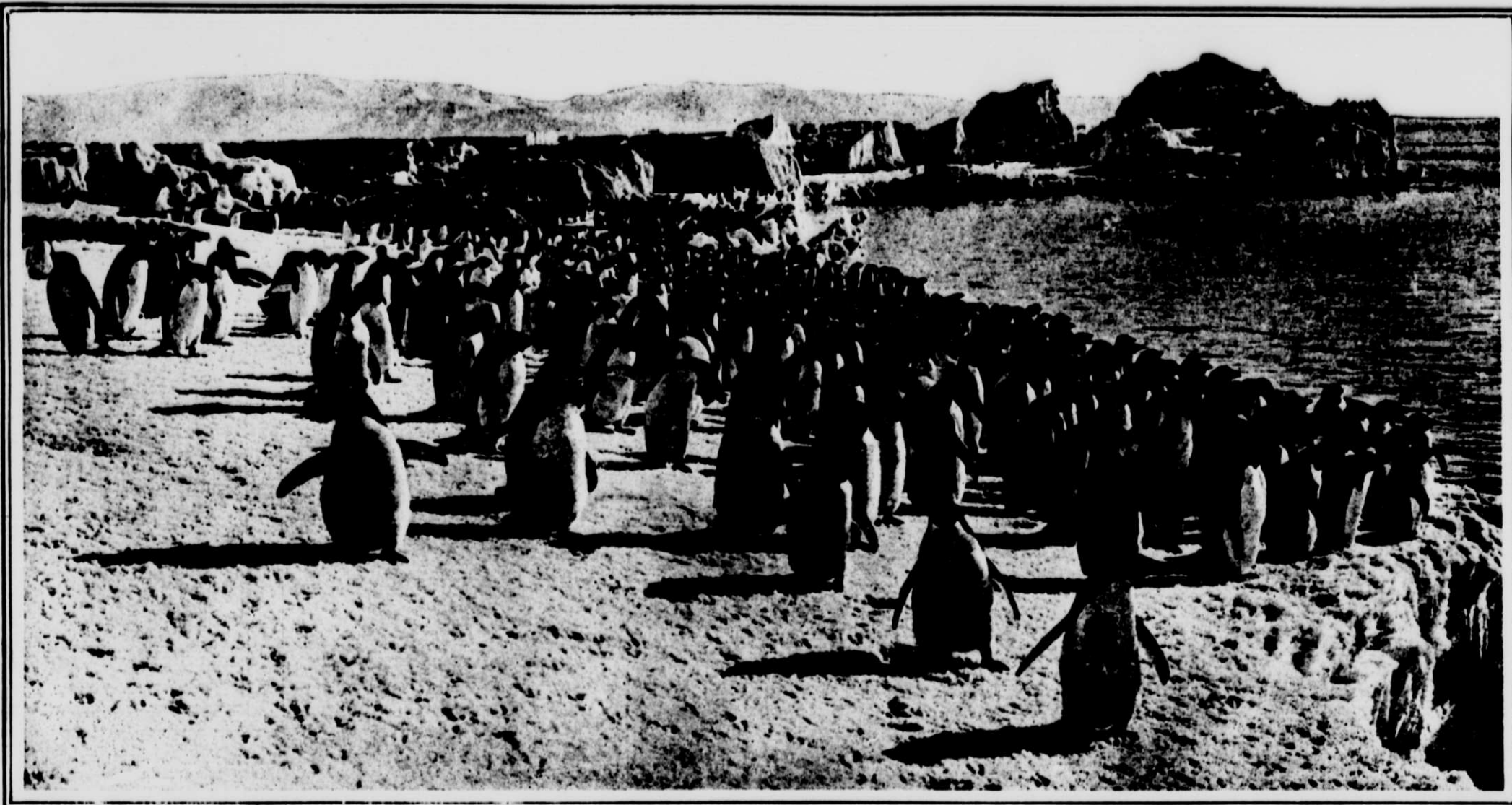
WHEN Capt. Scott made his dash to the south pole Dr. G. Murray Levick remained in winter quarters and devoted himself to a study of the animal life of the Antarctic. In a book just published by Melrose, Nast & Co., he describes with graphic pen the curious social and community life of the penguins in their rookeries. He discovered many interesting things hitherto unknown about the habits of these birds, the nearest approach to the primitive bird with rudimentary wings.

The penguins of the Antarctic regions very rightly have been termed the true inhabitants of that country, says Dr. Levick. The species is of great antiquity, fossil remains of their ancestors having been found which showed that they flourished as far back as the eocene epoch. To a degree far in advance of any other bird the penguin has adapted itself to the sea as a means of livelihood, so that it rivals the very fishes. This proficiency in the water has been gained at the expense of its power of flight, but this is a matter of small moment, as it happens.

In few other regions could such an animal as the penguin rear its young, for when on land its short legs offer small advantage as a means of getting about, and as it cannot fly it would become an easy prey to any of the carnivora which abound in other parts of the globe. Here, however, there are none of the bears and foxes which inhabit the north polar regions, and once ashore the penguin is safe.

When seen for the first time the Adelle penguin gives you the impression of a very smart little man in an evening dress suit, so absolutely immaculate is he, with his shimmering white front and black back and shoulders. He stands about two feet five inches in height, walking very upright on his little legs.

His carriage is confident as he approaches you over the snow, curiosity in his every movement. When within a yard or two of you, as you stand silently



"Occasionally an unaccountable 'broodiness' seemed to take possession of the Penguins."

pairing them or rearrangement of any sort. Afterward I found that they were unmated hens waiting for mates to come to them, and that this was a very common custom among them. If two occupied nests within reach of one another they would stretch out their necks and peck at each other. Their endeavor seemed to be to peck each other's tongue, and this they frequently did, but generally struck the soft parts

have induced this act, as thousands of old unoccupied nests lay all around.

On October 18 the weather cleared and a fair number of penguins started to build their nests. The great majority, however, apparently resting, still sat about. Those that built took their stones from old nests, as at present so many of these lay unoccupied. They made quite large nests, some inches high at the sides, with a comfortable hollow in the middle to sit in. The stone carrying was done by the male birds, the hens keeping continual guard over the nest, as otherwise the pair would have been robbed of the fruits of their labors as fast as they were acquired.

As I strolled through the rookery most of the birds took little or no notice of me. Some, however, swore at me very savagely, and one infuriated penguin rushed at me from a distance of some ten yards, seizing the leg of my windproof trousers.

The consciousness of guilt always makes a penguin smooth his feathers and look small, while indignation has the opposite effect. Often when observing a knoll crowded with nesting penguins I have seen an apparently undisturbed individual slipping quietly along among the nests, and always by his subsequent proceedings he has turned out to be a robber on the hunt for his neighbor's stones. The others too, seemed to know it and would have a peck at him as he passed them.

At last he would find a hen seated unwarily on her nest, slide up behind her, deftly and silently grab a stone and run off triumphantly with it to his home. Time after time he would return to the same spot, the poor depredated nestholder being quite oblivious of the fact that the side of her nest which lay behind her was slowly but surely vanishing stone by stone.

As I grew to know these birds from continued observation it was surprising and interesting to note how much they differed in character, though the weaker minded who would actually allow themselves to be robbed were few and far between, as might be expected. Few if any of these ever could succeed in hatching their young and winning them through to the feathered stage.

When starting to make her nest the usual procedure is for the hen to squat on the ground for some time, probably to thaw it, then working with her claws to scratch away at the material beneath her, shooting out the rubble behind her. As she does this she shifts her position in a circular direction until she has scraped out a round hollow. Then she begins to perform her journey after journey, returning each time with one pebble in her beak which she deposits in front of the hen, who places it in position.

On the ice they have two modes of progression. The first is simple walking. Their legs being very short, their stride amounts at most to four inches. Their rate of stepping averages about 120 steps per minute when on the march.

Their second mode of progression is

"tobogganing." When wearied by walking or when the surface is particularly suitable, they fall forward onto their white breasts, smooth and shimmering with a beautiful metallic lustre in the sunlight, and push themselves along by alternate powerful little strokes of their legs behind them.

Walking actually among the nests your temper is tried sorely, as every bird within reach has a peck at your legs, and occasionally a cock attacks you bravely, battering you with his little flippers in a manner ludicrous at first, but aggravating after a time, as the operation is painful and severe enough to leave bruises behind it.

The hen would establish herself on an old nest, or in some cases scoop out a hollow in the ground and sit in or by this, waiting for a mate to propose himself. She would not attempt to build while she remained unmated. During the first week of the nesting season, when plenty of fresh arrivals were continually pouring into the rookery, she did not have long to wait as a rule. Later, when the rookery was getting filled up and only a few birds remained unmated in that vast crowd of some three-quarters of a million her chances were not so good.

For example, on November 16, on a knoll thickly populated by mated birds, many of which already had eggs, a hen was observed to have scooped a little hollow in the ground and to be sitting in this. Day after day she sat on, looking thinner and sadder as time passed and making no attempt to build her nest. At last, on November 27, she had her reward, for I found that a cock had joined her, and she was busily building her nest in the little scoop she had made so long before, her husband steadily working away to provide her with the necessary pebbles. Her forlorn appearance of the past ten days had entirely given place to an air of occupation and happiness.

When starting to fight the cocks sometimes peck at each other with their beaks, but always they very soon start to use their flippers, standing up to one another and raining in the blows with such rapidity as to make a sound which, in the words of Dr. Wilson, resembles that of a boy running and dragging his hospetic along on an iron palling. Soon they start "in-fighting," in which position one bird fights right handed, the other left handed; that is to say, one leans his left breast against his opponent, swinging in his blows with his right flippers, the other presenting his right breast and using his left flipper. My photographs of cocks fighting all show this plainly. It is interesting to note that these birds, though fighting with one flipper only, are ambidextrous. While battering one another with might and main they use their weight at the same time, and as one outlasts the other he drives his vanquished opponent before him over the ground as a trained boxing man when "in-fighting" drives his exhausted opponent around the ring.

Desperate as these encounters are, I don't think one penguin ever kills another. In many cases blood is drawn.

I saw one with an eye put out, and that side of its beak (the right side) clothed with blood, while the crimson print of a bloodstained flipper across a white breast was no uncommon sight.

Hard as they can hit with their flippers, however, they are also well protected by their feathers, and being marvellously tough and enduring the end of a hard fight merely finds the vanquished bird prostrate with exhaustion and with most of the breath beaten out of his little body. The victor is invariably satisfied with this and does not seek to despatch him with his beak.

Let me here call attention to the fact that not a single bird out of all those thousands had left the rookery once it had entered it. Consequently not a single bird had taken food of any description during all the most strenuous part of the breeding season, and as they did not start to feed till November 8 thousands had to my knowledge fasted for no fewer than twenty-seven days. Now of all the days of the year these twenty-seven are certainly the most trying during the life of the Adelle. With the exception, in some cases, of a few hours immediately after arrival (and I believe the later arrivals could not afford themselves even this short respite) constant vigilance had been maintained; battle after battle had been fought; some had been nearly killed in savage encounters, recovered, fought again and again with varying fortune. They had mated at last, built their nests, procured their species and, in short, met the severest trials that nature can inflict upon mind and body and at the end of it, though in many cases bloodstained and in all cases and bedraggled with mire, they were as active and as brave as ever.

The skuas had increased considerably in numbers by November 4 and frequently came to the scrap heap outside our hut. Here were many frozen carcasses of penguins which we had thrown there after the breasts had been removed for food during the past winter. The skuas picked the bones quite clean of flesh, so that the skeletons lay white under the skins, and it was remarkable to what distances they sometimes carried the carcasses, which weighed considerably more than the skuas themselves. I found some of these bodies over five hundred yards away.

A perpetual feud was carried on between the penguins and the skuas. The latter birds come to the south in the summer and make their nests close to the penguins and during the breeding time live almost entirely on the eggs and later on the chicks. They never attack the adult penguins, who run at them and drive them away when they light within reach, but as the skuas can take to the wing and the penguins cannot, no pursuit is possible.

The skuas fly about over the rookery, keeping only a few yards from the ground, and should one of them see a nest vacated and the eggs exposed, if only for a few seconds, it swoops at this and with scarcely a pause in its flight transfixes an egg upon its beak

and carries it to an open space on the ground, there to devour the contents. Here then was another need for constant vigilance, and so daring did the skuas become that often when a penguin sat on a nest carelessly, so as to leave one of the eggs protruding from under it, a lightning dash from a skua would result in the egg being borne triumphantly away.

The bitterness of the penguins' hatred of the skuas was well shown in the neighborhood of our scrap heap. None of the food thrown out onto this heap was of the least use to the penguins, but we noticed after a time that almost always there were one or more pen-



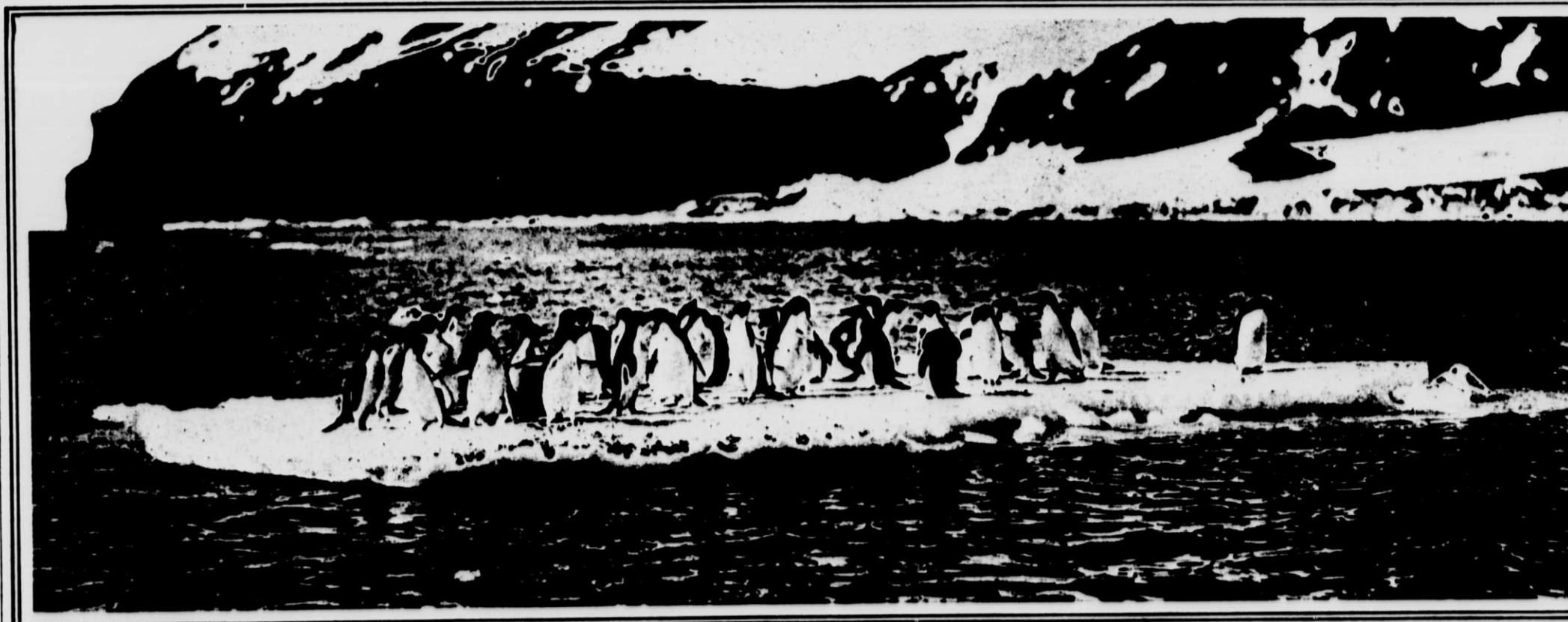
"As they stood, chatting together, it became evident they were sociable animals, glad to meet one another."

guins there keeping guard against the skuas and doing their utmost to prevent them from getting the food and never allowing them to light on the heap for more than a few seconds at a time. In fact a constant feature of this heap was the sentry penguin, darting hither and thither, aiming savage pecks at the skuas, which would then rise a yard or two into the air out of reach, the penguin squalling in its anger at being unable to follow its enemy. At this juncture the penguin would imitate the flying motion with its flippers, seeming instinctively to attempt to mount into the air.

All that we could do to protect our friends was to shoot as many of these sea leopards as possible, but though we may have made some difference, there were always many about.

Some idea of the depredations committed by these animals may be gathered from the fact that the stomach of one which we shot I found the bodies of eighteen penguins in various states of digestion, the beak's intestines being literally stuffed with the feathers remaining from the disintegration of many more.

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A joy ride on an ice floe.



"With graceful arching of his neck, appeared to assure her of his readiness to take charge."

watching him, he halts, poking his head forward with little jerky movements, first to one side, then to the other, using his right and left eye alternately during his inspection. He seems to prefer using one eye at a time when viewing any near object, but when looking far ahead or walking along he looks straight ahead of him, using both eyes. He does this, too, when his anger is aroused, holding his head very high, and appearing to squint at you along "his beak."

After a careful inspection he may suddenly lose all interest in you, and ruffling up his feathers sink into a doze. Stand still for a minute till he has settled himself to sleep, then make sudden motion to wake him without startling him, and he opens his eyes, stretching himself, yawns, then finally walks off, caring no more about you.

The Adelle penguins spend their summer and bring forth their young in the far South. Nesting on the shores of the Antarctic continent and on the islands of the Antarctic seas they are always close to the water, being dependent on the sea for their food, as are all Antarctic fauna. The frozen regions inland, for all practical purposes, being barren of both animal and vegetable life.

Their requirements are few—they seek no shelter from the terrible Antarctic gales, their rookeries in most cases being in open windswept spots. In fact, three of the four rookeries I visited were in the three most windy regions of the Antarctic. The reason for this is that only windswept places are so free of snow that solid ground and stones for making nests are to be found.

When the chicks are hatched and fully fledged they are taught to swim, and when accomplished they can take care of themselves both young and old. The southern limits of the penguins make their way to the pack ice and northward, thus escaping the darkness of the Antarctic winter and keeping where they will find open water which they need.

One day I noticed some penguins in possession of old nests on the ice. These mostly squatted in the nests without any attempt at re-

Interesting Life of the Immaculate Inhabitants of Frozen South

During the fasting season, as none of the penguins had entered the water, they all became very dirty and disreputable in appearance, as well may be imagined considering the life they led, but now that they went regularly to swim they immediately got back their sleek and spotless state.

From the ice foot to the open water the half mile or so of sea ice presented a lively scene as the thousands of birds passed to and fro over it, outward bound parties of dirty birds from the rookery passing the spruce bathers, homeward bound after their banquet and frolic in the sea. So interesting and instructive was it to watch the bathing parties that we spent whole days in this way.

The couples took turn and turn about on the nest, one remaining to guard and incubate while the other went off to the water.

On leaving their nests the birds made their way down the ice foot onto the sea ice. Here they would generally wait about and join up with the others until enough had gathered together to make up a decent little party, which would then set off gayly for the water.

As a band of spotless bathers returning to the rookery, their white breasts and black backs glistening with a fine metallic lustre in the sunlight, met a dirty and bedraggled party on its way out from the nesting ground frequently, both would stop and the clean and dirty mingle together and chatter with one another for some minutes. If they were not speaking words in some language of their own their whole appearance belied them, and as they stood, some in pairs, some in groups of three or more, chattering amicably together it became evident that they were sociable animals, glad to meet one another, and like many men, pleased with the excuse to forget for a while their duties at home, where their mates were waiting to be relieved for their own spell off the nests.

After a variable period of this interchange the two parties would separate and continue on their respective ways, a clean stream issuing from the crowd in the direction of the rookery, a dirty one heading off toward the open water, but here it was seen that a few who had bathed and fed and were already perhaps half way home, had been persuaded to turn and accompany the others, and so back they would go again over the way they had come, to spend a few more hours in skylarking and splashing about in the sea.

In speaking of these games of the